

Remarks

Claims 1-9, 11 and 13-22 were pending.

Claims 2, 4 and 5 are amended.

Claims 9, 18 and 19 are cancelled.

Claims 1, 3, 6-8, 11, 13-17 and 20-22 are as previously presented.

The application now contains claims 1-8, 11 and 13-17 and 20-22.

Claims 2 and 5 are amended for clarity by inserting the term "layer" immediately before the term "(B)" in accordance with the Examiner's suggestion.

Claims 4 and 5 are amended for clarity by deleting the word "high" immediately before the term "index of refraction" and by inserting directly after said term the limitation "greater than about 1.65". Support is found in the specification on page 5 lines 20-21. Claim 5 is further amended to delete the phrase "especially TiO₂," from the description of layer D1.

No new matter is added.

Objections

The specification is objected to for containing a traverse white mark which at least partially obscures line 4 on many pages. This appears to be an artifact of electronic copying. Applicants enclose a substitute specification which is identical to the specification originally submitted.

Rejections

Claims 1-7, 11, 13-17, 20 and 22 are rejected under 35 USC 112 second paragraph as being indefinite.

Applicants respectfully traverse the rejections.

Applicants respectfully submit that the amendments above address and overcome the specific rejections of claims 2, 4 and 5 as detailed in the Action and kindly ask that the rejections be withdrawn. Applicants suggest that the discussion below regarding the allowability of claim 1 will address any other 112 rejections.

Claims 1-7, 11, 13-17, 20 and 22 (20-22?) are rejected under 35 USC 102(b) as anticipated by, or under 35 USC 103(a) as obvious over Coulter et.al., US 6,586,098.

Applicants respectfully traverse the rejections.

The Examiner notes that the instant invention is directed to a product by process and that the product itself must be shown to be novel over existing products regardless of the process for its preparation. The difference between the instant pigments and those of Coulter, as identified by the Examiner, is that the instant pigments are prepared by calcining the flakes comprising a metal and a SiO₂ layer in a non-oxidizing atmosphere, whereas similar pigments in Coulter are not calcined.

In order for the instant pigments to be allowable, the pigments obtained by calcination of the metal/ SiO₂ flakes in a non-oxidizing atmosphere must be different from similar flakes that are not calcined. Applicants respectfully aver that this is indeed the case as demonstrated, for example, by Example 2, page 30 of the instant specification.

In Example 2 of the present application the preparation of a product is described having the following layer structure: TiO₂ (50 nm)/SiO (270 nm)/Al (50 nm)/SiO (270 nm)/TiO₂ (50 nm). This product is referred to as reference specimen (RS). Another specimen having the same layer structure as the reference specimen (RS) is heated in an argon atmosphere 0.5 hours at 700°C and is referred to as specimen (S). The reflection color (CIE-L*a*b*) of the specimen (S) and the reference specimen (RS) is determined at irradiation with standard illuminant D₆₅ under a 10°, 30° and 50° observation angle (Example 2, page 30) and the differences are listed in the table:

Specimen	Calcination	Viewing Angle [Grad]	L*	a*	b*	c*	h
RS	no	10	98	9,7	5,2	11	28,1
RS	no	30	99,5	0,2	15,8	15,8	89,1
RS	no	50	100	-8,5	16,5	18,6	117
S	yes	10	70	-6,4	-3,0	7	205
S	yes	30	68,4	-11,7	-7,6	13,9	213
S	yes	50	64,8	-13,8	-16,8	21,7	230,6

As evident from the table, heating in an argon atmosphere results in a different and new product with different color characteristics.

While Coulter et. Al., US6586098 may disclose highly reflective flake-based pigments similar in initial composition, i.e., composition prior to calcination, it fails to teach the calcination of such pigments in a non-oxidizing atmosphere.

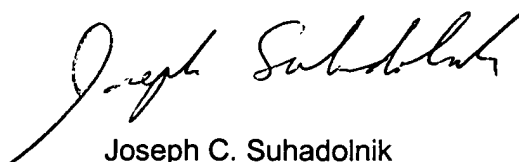
Applicants respectfully submit that the data of record referenced above clearly demonstrate that the calcination step as described in the instant claims results in a substantially different product.

Accordingly, the product claimed as a product-by-process claim 1 of the instant application is different from the cited and therefore novel. Applicants further respectfully submit that nothing in the cited art suggests the step of calcination in a non-oxidizing atmosphere nor does the cited art in any way describe the instant pigments thus obtained.

Applicants therefore respectfully submit that all rejections are addressed and are overcome and kindly ask that they be withdrawn and claims 1-8, 11 and 13-17 and 20-22 be found allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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